US ERA ARCHIVE DOCUMENT



U.S. EPA Design for the Environment Program

Safer Product Labeling and Alternatives Analysis

PPDC Workgroup October 13, 2009

US. EPA

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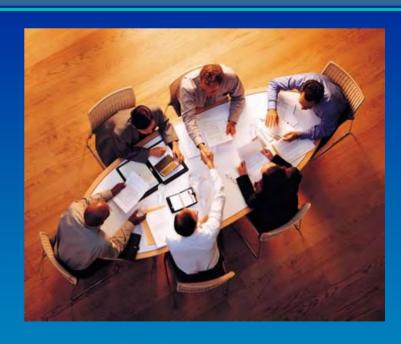




What DfE is About

- Goals
 - Safer Alternative Chemicals
 - Safer Products
- Central Elements
 - OPPTS technical tools and expertise
 - Multi-stakeholder participation
- Results

• Industry partners reduced more than 330 million pounds of chemicals of concern last year



Furniture Flame Retardancy Partnership Alternatives Assessment (Completed)



• Predominant flame retardant (pentaBDE) was being found increasingly in human tissue, breast milk and the environment.

- This flame retardant was phased-out at the end of 2004.
- Need for fire safety will likely increase based on planned national standards.
- Report provides data to inform industry.
- Decision-making for alternatives to this
 19 million pound per year chemical.

The Report

- Summary assessments of chemicals in flame retardant formulations.
- Tables summarizing EPA assessment for environmental and human health endpoints.
- Detailed hazard reviews.

Furniture Flame Retardancy Partnership

US. EPA

Results: Data Presentation

Human Health Hazard Concern

Ecotoxicity Hazard Concern

Environmental Hazard Concern

			Human Health Effects							Ecot	oxicity	Environmental		Potential Routes of Exposure							
		ation³	ırd	zer	g.	Ital	_						ation	Worker			General Population				
Company Albemarle	Chemical SAYTEX RZ-243	% in Formulation ³	Cancer Hazard	Skin Sensitizer	Reproductive	Developmental	Neurological	Systemic	Genotoxicity	Acute	Chronic	Persistence	Bioaccumulation	Inhalation	Dermal	Ingestion	Inhalation	Dermal	Ingestion	Aquatic	Reactive or Additive?
	Proprietary E Tetrabromophthalate diol diester		L	L	L*	L*	L	M*	L	L	Н	L?	L	N	Υ	Υ	N	N	Υ	Υ	Additive
	Proprietary B Aryl phosphate		L	L	M*	M*	M	M*	L	Н	Н	L	М	N	Υ	Υ	N	Υ	N	N	Additive
	Triphenyl Phosphate CAS # 115-86-6		L	L	L	L	L	М	L	Н	Н	L	L	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Additive
Ameribrom	FR513						İ														
	Tribromoneopentyl Alcohol CAS # 36483-57-5		M	L	M	М	М	М	M	М	М	L	L	Υ	Υ	Υ	N	N	Υ	Υ	Reactive
Great Lakes	Firemaster 550																				
	Proprietary F Halogenated aryl ester		L	L	M	M	L	M	L	Н	Н	L?	L	N	Υ	Υ	N	Υ	Υ	Υ	Additive
	Proprietary G Triaryl phosphate, isopropylated		L	L	M*	M*	M	M*	L	Н	Н	L	М	N	Υ	Υ	Ν	Υ	N	N	Additive
	Triphenyl Phosphate CAS # 115-86-6		L	L	L	L	L	M	L	Н	Н	L	L	Υ	Υ	Υ	Υ	Υ	Υ	Υ	Additive
	Proprietary H Halogenated aryl ester		L	L	M	M	L	M	L	Н	H	L?	L	N	Υ	Υ	N	Υ	Υ	Υ	Additive



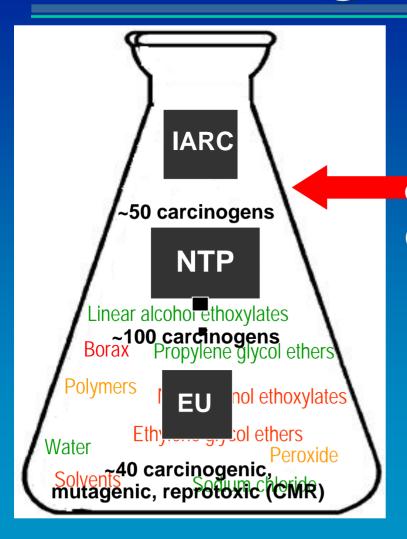
DfE Safer Product Labeling

- Cleaning products
 - Household
 - Industrial and Institutional
 - Direct release, car-wash, boat wash, graffiti removers, etc...
- Biological-based products
 - Holding tank treatments
 - Bioremediation products
- Deicers
- Aircraft conversion coatings
- Industrial coatings
- Inks
- Odor removal
- Field paint
- Tire balancing liquid



A Stringent Approach for Differentiating Products





chemicals un gommerce

- Does not allow dilution of toxicity
- One Acute mammalian toxicity
 One Acute mammalian toxicity
 One Management of known concern
- (1) ar forceit greicht geschleichten but poarly understood chemicals
 - Exantinese é black cliet in cal in the Neurotoxicity context of the context of
 - (2) · Constructive of the devite of mental
 - Stabilizers & inspinces on
 - Preservatives sensitization
 - - ·Envilonmentant be done and fate



Review – 3 Basic Components

- 1) Review every ingredient by functional use class
 - To promote green chemistry
 - To understand toxicity
 - Literature
 - Analogous chemicals SAR
- 2) Review formulation as a whole
 - Synergistic effects
 - pH
 - Performance testing
- 3) Partnership Agreement

Continuous Improvement:



As innovation occurs, continuum may shift

Continuum of Improvement

•Formula Ingredient by Functional Class



Characteristics of Ingredient of Concern

Characteristics of Improved Ingredient

Characteristics of Sustainable Ingredient

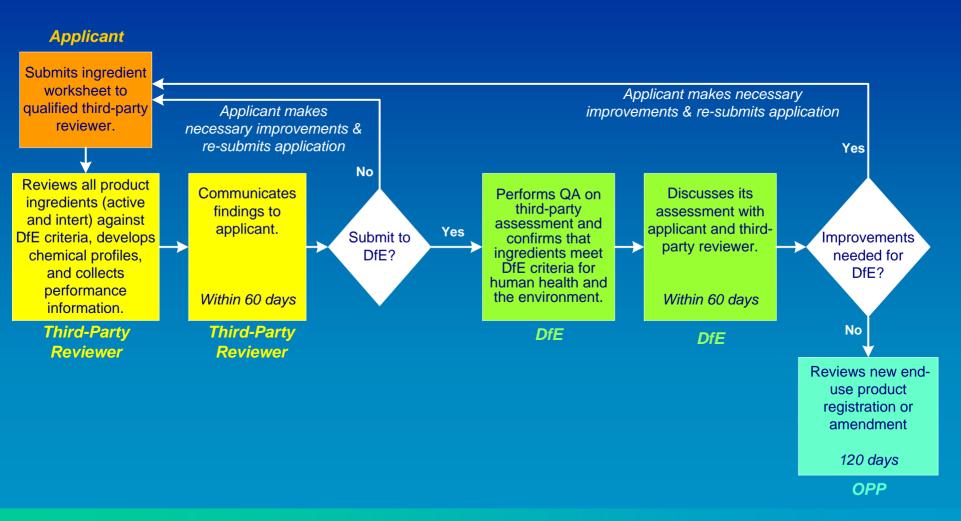


DfE Evaluation of Products in the Pilot

- The Whole Product Will Be Evaluated Against:
 - DfE Criteria for Safer Cleaning Products
- Each Inert Ingredient Will Be Evaluated Against:
 - DfE Criteria for Safer Cleaning Products
 - DfE Screens for Safer Chemicals
- Active Ingredients Will Be Evaluated Against:
 - DfE General Screen

Steps to Obtaining DfE Logo for a Currently Registered Product









- DfE Criteria for Safer Cleaning Products
- DfE Screens for Safer Chemicals
- Logistics for Partnering

www.epa.gov/dfe



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